

## SYNOPSIS

### ATTACHMENT A

# Flight Inspection Scheduling Optimization Modeling System Requirements

***VENDORS ARE TO COMPLETE AND RETURN WITH THEIR Market survey information.***

## A. Scope of Requirement

Federal Aviation Administration, Aviation System Standards, (AJW-3) Flight Inspection Operations Group (AJW-33) is currently investigating the use of optimization software modeling methods that may provide schedules for more efficient flight inspection trips (itineraries) while also meeting several defined operational objectives dealing with National Airspace Systems (NAS) availability. The purpose of this market survey is to allow industry to review and provide comments on the Draft Performance Work Statement and let industry see what the FAA's requirements are for an optimization software model system to be built on mathematical programming optimization techniques that would meet the FAA's objectives. The market survey may also be used to develop a vendors list for issuance of the SIR package. Therefore, the FAA needs the vendor to respond to both the announcement and provide the information as requested on this form. The information is to be broken down into two basic categories, one is technical/ history in development of aircraft fleet scheduling and experience and the other is contractor basic information.

Vendors in comparing their current capabilities should compare the DRAFT Performance Work Statements requirements to the following:

### 1. Does your company currently have on the shelf Aircraft Fleet Optimization Modeling Software?

Yes

NO

If yes-- Vendors need to indicate if the product they propose is currently either, "Fully Compliant Now", "Partially Compliant Now", "Future Compliance Anticipated" or "Non Compliant". -please identify what you have and provide information on capabilities.

**The major functional requirements of the flight inspection schedule optimization modeling system must address are as follows:**

(a) Optimize Along Multiple Criteria (Objectives). Essentially there are two main categories of criteria that the model needs to optimize. The first category relates to meeting operational objectives including servicing the NAS, meeting flight plan goals and meeting publication schedule goals. The second category is financial in nature and includes maximizing the "On Scene" to "Enroute" time ratio and not exceeding budget constraints for overtime, TDY, and fuel.

☐ Fully Compliant Now ☐ Partially Compliant Now ☐ Future Compliance Anticipated ☐ Non Compliant.

(b) Consider Current Realism Scheduling Constraints. This will include such things as time restrictions at airports, anticipated time to perform flight inspection work tasks, expected enroute times between facilities, expected weather impacts, and unplanned inspections.

☐ Fully Compliant Now ☐ "Partially Compliant Now" ☐ Future Compliance Anticipated" ☐ Non Compliant.

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(c) Decision Support. The model will be developed to help the current flight inspection scheduling staff determine operationally - effective, cost-efficient schedules. It is still expected that human judgment will need to exercise in the scheduling process even if it's merely validating the model's suggested itinerary in some cases.

\_\_\_\_ Fully Compliant Now \_\_\_\_ "Partially Compliant Now \_\_\_\_ Future Compliance Anticipated" \_\_\_\_ Non Compliant.

(d) What If Capability. The modeling system should allow the scheduler to override various modeling parameters to determine the impact on a flight itinerary. For example, the scheduler may wish to increase the crew availability time to determine the impact on the itinerary. Similarly, the scheduler may wish to increase or decrease the geographical coverage to determine the impact on the itinerary. Similarly the scheduler may wish to re-prioritize inspections at a certain facilities in a geographic area to determine the impact on the itinerary.

\_\_\_\_ Fully Compliant Now \_\_\_\_ "Partially Compliant Now \_\_\_\_ Future Compliance Anticipated" \_\_\_\_ Non Compliant.

(e) Cost versus Optimize. The modeling system should be able to cost any proposed itinerary that is input. This implies that a costing algorithm will need to be defined based on cost of aircraft operations to the 10<sup>th</sup> of a flight hour.

\_\_\_\_ Fully Compliant Now \_\_\_\_ "Partially Compliant Now \_\_\_\_ Future Compliance Anticipated" \_\_\_\_ Non Compliant.

(f) Optimizing Logic. The model will be developed around the following logic for developing weekly flight inspection itineraries:

1. Within a designated geographic area defined by the Shift Box Query function in FOMS, first determine a schedule that will meet any "hard" scheduling requirements.
2. Then optimize around the "hard\*" requirements based on the priorities of the "soft\*\*" requirements found within a specified distance of the designated geographic area.
3. Prepare the circuit from an aircraft's "home base" to "home base" incorporating the logic of (a) and (b) above.

\_\_\_\_ Fully Compliant Now \_\_\_\_ "Partially Compliant Now \_\_\_\_ Future Compliance Anticipated" \_\_\_\_ Non Compliant.

(g) Operations Requirements. The three operations requirements discussed above concerning contract fueling, hangar availability and problem recovery need to be included in the model. Other operations requirements may also need to be incorporated as identified from field offices other than those identified for the Atlantic City field office.

\_\_\_\_ Fully Compliant Now \_\_\_\_ "Partially Compliant Now \_\_\_\_ Future Compliance Anticipated" \_\_\_\_ Non Compliant.

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## FEDERAL AVIATION ADMINISTRATION--BUSINESS DECLARATION

1. Name of Firm: \_\_\_\_\_

2. Address of Firm: \_\_\_\_\_  
\_\_\_\_\_

3. Telephone Number of Firm: \_\_\_\_\_

Facsimile Number of Firm: \_\_\_\_\_

4. (a) Name of Person Making Declaration: \_\_\_\_\_

(b) Telephone Number of Person Making Declaration: \_\_\_\_\_

(c) Position Held In the Company: \_\_\_\_\_

5. Controlling Interest In Company ( X All Appropriate Boxes)

( ) Black American ( ) Hispanic American ( ) Native American

( ) Asian American ( ) Female-Non Minority ( ) Male-Non Minority

( ) Female ( ) Male ( ) 8(a) Certified (Certification Letter Attached)

6. Is the person identified in Number 4 above, responsible for day-to-day management and policy decision making, including but not limited to financial and management decisions?

( ) Yes

( ) No

If No, provide the name and telephone number of the person who has this authority:

7. Nature of Business—Specify major services/products.  
\_\_\_\_\_

8. (a) Years the firm has been in business: \_\_\_\_\_ (b) No. of Employees: \_\_\_\_\_

9. Type of Ownership: ( ) Sole Ownership ( ) Partnership ( ) Other/Explain Below:  
\_\_\_\_\_

10. Gross receipts of the firm for the last three years: Year Ending \_\_\_\_\_

Gross Receipts \$ \_\_\_\_\_ YEAR Ending \_\_\_\_\_ Gross Receipts \$ \_\_\_\_\_

Year Ending - \_\_\_\_\_ Gross Receipts \$ \_\_\_\_\_

11. Complete all of the following.

Data Universal Numbering System (DUNS) \_\_\_\_\_

Tax Identification Number (TIN) \_\_\_\_\_

Employer Identification Number (EIN) \_\_\_\_\_

**Privacy Act Statement:** The TIN/EIN/SSN is required to comply with the reporting requirements of 26 U.S.C. 6041, 6041A and 6050M and implementing regulations issued by the Internal Revenue Service (IRS). Failure to provide the information may exclude you from doing business with the Federal Aviation Administration.

12. Is the firm a small business? Yes \_\_\_\_\_ No \_\_\_\_\_

I DECLARE THAT THE FOREGOING STATEMENTS CONCERNING \_\_\_\_\_

(Name of Business)

ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF. I AM AWARE THAT I AM SUBJECT TO CRIMINAL PROSECUTION UNDER THE PROVISIONS OF 18 U.S.C. 1001.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name/Title: \_\_\_\_\_